



The Differences in Pre-Caesarean Anxiety Levels Between Primigravida and Multigravida Patients

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Abstract

Background: Pre-operative anxiety before caesarean section is frequently encountered and may adversely affect the childbirth experience and maternal health outcome. Different groups of patients such as primigravida and multigravida women may experience varying levels of anxiety, which could impact their readiness for surgery and recovery. **Purpose:** The present study attempted to identify differences in the preoperative anxiety levels among primigravida and multigravida patients scheduled for a caesarean section. **Methods:** Forty-four respondents were recruited into this study; they were further divided into two groups of 22 primigravida and 22 multigravida patients, from a hospital in Indonesia. The anxiety levels were measured by the State-Trait Anxiety Inventory-S (STAI-S), which measures situational anxiety at a given moment. The Mann-Whitney U test was used to analyze the data in order to establish whether there is any significant difference between the two groups. **Results:** From statistical analysis, the obtained result was $p\text{-value}=0.066$ ($p>0.05$). Therefore, there is no significant difference in pre-caesarean anxiety levels between primigravida and multigravida patients. **Conclusion:** The findings, therefore, suggest there is no statistically significant difference in preoperative anxiety levels between both groups; however, the outcome might be affected by some social support, past experiences, and psychological factors which were not taken into consideration in this study. The study indicates a need for individualized approaches to manage anxiety for caesarean delivery, irrespective of the pregnancy condition.

Keywords: anxiety, preoperative; caesarean section, primigravida, multigravida

Introduction

Labor is a clinical diagnosis that consists of two components: uterine contractions, which increase in frequency and intensity, and the cervix, which opens and dilates. However, in some cases with complicated indications where vaginal delivery is not possible due to the risk of death to the pregnant woman and the baby, obstetricians will choose to use other selective techniques such as caesarean section [1].

A caesarean section is a procedure in which the fetus is delivered through the abdomen (laparotomy). It requires an

incision in the uterus (hysterectomy). In general, indications for caesarean section are relative and based on the obstetrician's assessment. Lack of contractions is the most common indication for a primary caesarean section [2–4]. Other indications include absolute cephalopelvic disproportion (CPD), in which the fetus is too large compared to the pelvic cavity to allow for vaginal delivery, even if the patient is in optimal condition [5].

Caesarean section is the most common major surgery performed worldwide and one of the first major surgeries performed

independently by obstetrics and gynecology residents [6]. Caesarean section (SC) is the most common surgical procedure performed after male circumcision, accounting for 20-25% of all births in the United Kingdom and 28% of all births in the United States [1].

SC is also commonly performed in Indonesia. The prevalence of SC in Indonesia is 17.6%. The region with the highest prevalence was DKI Jakarta (31.3%) and the region with the lowest prevalence was Papua (6.7%). The prevalence of SC in Central Java was 17.1% [7].

Anxiety is a negative mood state characterized by physical tension and worry about the future [8]. Anxiety is a signal that warns of impending danger and allows a person to take action to deal with the threat. Feelings of anxiety are experienced by almost everyone. These feelings are characterized by a pervasive, unpleasant, vague sense of dread, and often manifest as autonomic symptoms such as headache, sweating, palpitations, chest discomfort, and abdominal bloating [9,10]. A person experiencing anxiety may also feel restless, which sometimes manifests into an inability to sit or stand for long periods of time. The specific symptoms of anxiety are generally different for each person [11].

The anxiety experienced by patients prior to surgery, if not properly addressed, will result in anxiety that will persist and the symptoms that occur may become worse. The patient's quality of life is also affected. Social functioning may be impaired. In some cases, patients may become isolated. However, with appropriate interventions, symptoms can be controlled, neurotransmitter balance can be improved, and recovery can be achieved. However, even with appropriate treatment, previous symptoms may return [12].

In the study "Preoperative anxiety: detection and contributing factors" which

used the STAI instrument to detect anxiety in preoperative patients found that high anxiety was found in women and in patients who had no history of anesthesia or surgical procedures [13]. Furthermore, the study "Parameters that Affect the Comfort Level of Pregnant Women Before Caesarean Section: Fasting and Anxiety" showed high STAI scores in several patients who were going to undergo SC, which meant that these patients experienced high anxiety in the preoperative phase which then resulted in a decrease in the comfort level of these patients [14].

Approaching childbirth, several questions will arise in the minds of pregnant women such as whether they can deliver normally or have to go through a caesarean section, whether the birth canal must be expanded by cutting, whether they are able to push, whether the placenta can be born after the baby is born or not, how the pain will be felt in the process of labor, and so on, which then these questions will cause fear and anxiety about the delivery process [15].

Caesarean section is more commonly associated with higher maternal morbidity and mortality and is associated with a significantly higher risk for stress, depression and anxiety compared to vaginal delivery. Risk factors for high anxiety levels include younger age, parity, education level, and having had previous anesthesia. In a study conducted on three hundred pregnant women, it was found that the variables that showed a statistically significant association with higher anxiety scores were the woman's age of 25-34 years, caesarean section for fetal safety indications, choice of general anesthesia, and the source of information on anesthesia choice was from lay people [16].

The presence of anxiety in the process of labor, either normal or surgical, can increase the tension and pain experienced by pregnant women [15]. Based on the

results of research on the relationship between maternal characteristics (age, parity status, education) and family support with pregnant women's anxiety in the third trimester, it is known that parity status is related to pregnant women's anxiety in the face of labor ($p < 0.01$) [17].

Based on data from medical records at the Cilacap Regional General Hospital in the last 3 months from February to April 2024, 147 cases of elective caesarean section were obtained, with an average of 49 cases with an average of 22 primigravida patients and an average of 27 multigravida patients per month. From the results of interviews with nurses and patients of pregnant women who will undergo caesarean section in the rose ward room, it is also found that some mothers who will undergo caesarean section experience anxiety. With the events described above, the researcher is interested in conducting research on differences in pre-caesarean anxiety levels in primigravida and multigravida patients at Cilacap Regional General Hospital.

Methods

This study used descriptive quantitative research with a cross-sectional approach. The research was conducted in October 2023 until August 2024. Data were collected in July - August 2024 at the rose ward room of RSUD Cilacap. The population in this study were all pregnant women who undergo elective sectio caesarea at RSUD Cilacap from July to August 2024, totaling 44 patients. The sample size in this study is determined using the Slovin formula. Based on the calculation of the formula, the required sample is 44 samples consisting of 22 primigravida respondents and 22 multigravida respondents. Data analysis was performed using univariate and bivariate analysis.

Study Design

This analysis uses primary data from the results of demographic data questionnaire and State Trait Anxiety Inventory-State (STAI-S) anxiety questionnaire that have been filled in by respondents and secondary data in the form of medical data in the number of patients who will undergo sectio caesarean procedure. This study was conducted to determine the differences in pre-caesarean anxiety levels in primigravida and multigravida patients at RSUD Cilacap.

Data Collection and Outcome Measurement

Data collection was carried out using demographic data for parity status, age, and education level, and STAI-S questionnaire, then processing including editing, coding, scoring, processing, and cleaning. This study focuses on anxiety levels in pre-caesarean.

Statistical Analyses

All statistical analysis in this study used SPSS statistics with version 26.0, IBM. The data analysis used in this study is descriptive statistics which aims to analyze data by describing the data that has been collected. The data analysis methods used in this study was analyzed using univariate and bivariate analysis. Descriptive statistics were performed to determine the differences in pre-caesarean anxiety levels in primigravida and multigravida patients at RSUD Cilacap.

Result

1. Respondent Characteristics

The distribution of respondent characteristics based on age, education level, and parity status can be seen in table 1:

| Table 1. Distribution characteristics | | | |
|---------------------------------------|------------------|------------------|-------|
| Characteristic | Primigra vida | Multigra vida | Total |
| Age | | | |

| | | | |
|------------------------|---------------|---------------|----|
| < 20 years old | 1 (2,3%) | 0 | 1 |
| 20-30 years old | 17 (38,6%) | 9 (20,5%) | 26 |
| > 30 years old | 4 (9,1%) | 13 (29,5%) | 17 |
| Education level | | | |
| Junior High School | 4 (9,1%) | 7 (15,9%) | 11 |
| Senior High School | 12 (27,3%) | 11 (25%) | 23 |
| Undergraduate | 6 (13,6%) | 4 (9,1%) | 10 |

Table 1 shows that the majority of primigravida respondents' ages were in the 20-30 years category as many as 17 respondents (38.6%) and the majority of primigravida respondents' education levels were at the high school level with 12 respondents (27.3%). Furthermore, table 4.1 shows that the majority of multigravida respondents' age was in the over 30 years category as many as 13 respondents (29.5%) and the majority of multigravida respondents had a high school education level as many as 11 respondents (25%).

2. Pre-Caesarean Anxiety Levels in Primigravida

The distribution of pre-caesarean anxiety levels in primigravida patients can be seen in table 2:

Table 2. Distribution of pre-caesarean anxiety levels in primigravida

| Anxiety Level | Score | f | % |
|------------------|---------|---|-------|
| Not anxious | 20 – 29 | 0 | 0% |
| Mild anxiety | 30 – 37 | 6 | 13,6% |
| Moderate anxiety | 38 – 44 | 8 | 18,2% |
| Severe anxiety | 45 – 80 | 8 | 18,2% |

Table 2 shows that the anxiety level of the majority of primigravida respondents was in moderate anxiety as many as 8 respondents (18.2%) and severe anxiety as many as 8 respondents (18.2%).

3. Pre-Caesarean Anxiety Levels in Multigravida

The distribution of pre-caesarean anxiety levels in multigravida patients can be seen in Table 3:

Table 3. Distribution of pre-caesarean anxiety levels in multigravida

| Anxiety Level | Score | f | % |
|------------------|---------|---|-------|
| Not Anxious | 20 – 29 | 5 | 11,4% |
| Mild anxiety | 30 – 37 | 5 | 11,4% |
| Moderate anxiety | 38 – 44 | 8 | 18,2% |
| Severe anxiety | 45 – 80 | 4 | 9,1% |

Table 3 shows that the anxiety level of the majority of multigravida respondents was in moderate anxiety as many as 8 respondents (18.2%).

4. Differences in Pre-Caesarean Anxiety Levels in Primigravida and Multigravida

Table 4. Differences in pre-caesarean anxiety levels in primigravida and multigravida

| Variables | Mean | SD | Mann Whitney U-test | P value |
|--------------|-------|--------|---------------------|---------|
| Primigravida | 44.23 | 11.767 | 167 | 0.066 |
| Multigravida | 38.59 | 10.684 | | |

The bivariate test used is the Mann-Whitney U test to conduct a categorical difference test on two unpaired groups on data that is not normally distributed. Based on the bivariate test conducted with Mann-Whitney, the Asymp. Sig. (2-tailed) of 0.066 which means $p > 0.05$. It can be concluded that based on the Mann-Whitney test there is no difference in the level of pre-caesarean anxiety in primigravida and multigravida patients.

Discussions

Overview of Pre-Caesarean Anxiety Levels in Primigravida and Multigravida Based on Respondent Characteristics

The characteristics of the respondents in this study were seen from age, education

level and parity status. The age characteristics in this study were the majority of primigravida respondents aged 20-30 years as many as 17 respondents (38.6%) and the majority of multigravida respondents aged > 30 years as many as 13 respondents (29.5%). Age in the range of 20-30 years is a rather mature age because at this age every individual has started to think logically and can determine something good or bad for himself. The age of the mother during pregnancy also has an effect on the development of feelings of fear and anxiety. If a woman is pregnant when she is under the age of 20, she tends not to experience emotional maturity. However, even the over-20 age group is still susceptible to feelings of anxiety [18]. These findings are also in line with the study "Correlates of higher anxiety scores reported by women admitted for elective caesarean section" which shows that the age group 25-34 years experienced more anxiety as many as 171 respondents (57%) [16].

The characteristics of the level of education in this study were that the majority of the respondents had a high school education, with 12 primigravida respondents (27.3%) and 11 multigravida respondents (25%). The higher the education of an individual, the easier it is for the individual to receive information, thus the more knowledge they have [19]. The level of anxiety in pregnant women is influenced by the factor of knowledge of pregnant women about pregnancy processes. Pregnant women who have adequate knowledge about pregnancy and childbirth can prepare themselves to anticipate themselves in dealing with anxiety before labor. This is in line with the research "Relationship between Education Level and Employment Status with Anxiety in Pregnant Women Trisemester III" which shows the results there is a significant relationship with p value 0.002 [20].

Overview of Pre-Caesarean Anxiety Levels in Primigravida

The anxiety level of the majority of primigravida respondents was in moderate anxiety as many as 8 respondents (18.2%) and severe anxiety as many as 8 respondents (18.2%). These results are in line with the results of research by [21] where the majority of primigravida patients experienced moderate anxiety as many as 67 patients (44.70%) and severe anxiety as many as 71 patients (47.30%). The experience of giving birth for the first time gives a feeling of happiness but is also full of worries, especially about what will happen during childbirth either vaginally or sectio caesarea. This anxiety arises due to the mother's thoughts and images of things that are scary during labor even though this is not certain to happen [22].

Overview of Pre-Caesarean Anxiety Levels in Multigravida

The anxiety level of the majority of respondents was in moderate anxiety as many as 8 respondents (18.2%). The results of this study are in line with [23] which states that the majority of multigravida patients have moderate levels of anxiety as many as 33 patients (50.8%). Mothers who have been pregnant can also experience anxiety due to problems that arise in the process of pregnancy and childbirth before. However, some multigravida mothers can also remain calm and confident in facing their labor [22].

Overview of Differences in Pre-Caesarean Anxiety Levels in Primigravida and Multigravida

The results of the normality test showed that only anxiety data in multigravida were normally distributed, while anxiety data in primigravida did not pass the assumption of normality, so the comparison test of two independent variables used was the Mann Whitney U test statistical test.

The results of the Mann Whitney U test statistical test to analyze the difference in pre-caesarean anxiety levels between primigravida and multigravida showed a p value of 0.066 ($p > 0.05$), so H_0 is accepted. This result states that there is no difference in pre-caesarean anxiety levels between primigravida and multigravida.

Similar research on this topic has not been done much in the last 5 years, but researchers found a study that is in line with the results of this study with the title "Relationship between Maternal Status and Anxiety Level in Facing Sectio Caesarea" which concluded that there was no relationship between maternal status or parity with pre-caesarean anxiety levels. Anxiety before the delivery process can be felt by both women who are pregnant for the first time (primigravida) and women who have been pregnant (multigravida) [24].

The results of this study are also in line with the research of [25] and [26] where no significant difference was found in the level of anxiety between primigravida and multigravida respondents. This can be influenced by several factors that are not included in the study such as the sense of comfort of pregnant women and the description of the labor process later. For multigravida, the description of the previous labor process can be a major factor of anxiety. Whereas in primigravida itself, anxiety can arise because primigravida has no experience of childbirth at all and only listens to other people which can sometimes lead to increased anxiety about childbirth.

However, the results of this study differ from several previous studies such as in research [27] and research by [28] which concluded that primigravida tend to have higher levels of anxiety than multigravida. This difference in results is influenced by several factors not examined in this study, such as the provision of adequate education by health workers and supported by the

patient's good ability to receive information, as revealed by [20] that pregnant women who have adequate knowledge of pregnancy and childbirth will allow themselves to anticipate themselves in the face of anxiety before childbirth.

Other factors like previous childbirth experience owned by multigravida cannot always reduce the level of anxiety before childbirth especially if the patient has a bad childbirth experience [25]. In addition, sufficient social and psychological support from family and health workers can also reduce anxiety in pregnant women regardless of their parity status whether primigravida or multigravida [29–31]. This is in line with the results of research conducted by [32].

Anxiety is a feeling of restlessness, anxiety, and worry caused by the expectation of danger or threat involving autonomic responses in a person [33]. Anxiety can affect a person's ability to make decisions and receive information [11]. Preoperative anxiety is seen as one of the most traumatic events in life. Before surgery, patients can feel anxious about their illness, worried about the success of the operation, worried about family or work problems, anxious about physical health after surgery, and difficulty in adapting [34].

The presence of anxiety in the labor process can increase the tension and pain experienced by pregnant women [35–37]. Pregnancy and childbirth are events that can cause fear, anxiety, and even trauma that causes excessive fear of death. This can occur in both primigravida and multigravida [26].

Researchers assume that parity status does not always affect the level of anxiety in patients who will undergo a section caesarea procedure [38,39] This is because there are main factors that have more influence on the anxiety level of pregnant women who will give birth, such as the

level of knowledge of childbirth [20] and previous childbirth experience [25].

Limitations Research

The limitation of this study is the research did not account for various factors that can significantly impact anxiety levels, such as a respondent's previous childbirth experiences, the availability of family support, and the provision of educational resources. These factors could have played a role in shaping the respondents' anxiety but were not controlled for in the analysis. Additionally, the use of a subjective questionnaire to measure anxiety presents its own challenges, as the results rely heavily on the respondents' personal perceptions and honesty. This subjectivity introduces the risk of bias, potentially skewing the accuracy of the findings and complicating the interpretation of anxiety levels among the participants.

Conclusion

This study involved 44 respondents. The distribution of characteristics of primigravida and multigravida respondents showed significant differences based on age and education level. In the primigravida group, most respondents were in the age range of 20-30 years (38.6%) and had a high school education level (27.3%). Meanwhile, in the multigravida group, the majority of respondents were over 30 years old (29.5%) and also had a high school education level (25%). In terms of anxiety, the highest level of anxiety in primigravida was in the moderate and severe anxiety category with 18.2% of respondents each, while in multigravida, the highest level of anxiety was in the moderate anxiety category with 18.2% of respondents. However, bivariate analysis with the Mann-Whitney test showed that there was no significant difference in pre-caesarea anxiety levels between primigravida and

multigravida patients, with an Asymp. Sig. (2-tailed) of 0.066 ($P > 0.05$).

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Conflict of Interest Statement

The authors have confirmed that they have no competing interests.

Data Availability

The datasets used or generated in this study are available from the corresponding author upon reasonable request.

Author Contributions

Farah Davanda Putri: Conception and design of the study, Search Data Base, Methodology, Analysis Risk of Bias, Data Analysis and Interpretation, Writing, Review and Editing. **Septian Mixrova Sebayang:** Study conception and design, search database, methodology, data analysis and interpretation, and writing, review, and editing. **Dwi Novitasari:** Conception and design of the study, Search Database, Methodology, Data Analysis and Interpretation, Writing, Review, and Editing.

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